

## REMARKS

By this amendment, claims 1 and 2 are revised to place this application in condition for allowance. Currently, claims 1-16 are before the Examiner for consideration on their merits.

First, no new matter is introduced by the revisions to claims 1 and 2. Defining titanium and the like as an adsorbent to be immersed in the metal salt is described in paragraph [0011] of Applicant's published patent application. The formulas found in claims 1 and 2 are found in paragraph [0029] of the published application.

Paragraphs [0044 and 0052] provide further support for the limitations now found in claims 1 and 2. In paragraph [0044], it is shown that titanium of 100g in the form of a plate with a thickness of about 1 mm is charged into calcium chloride of 10 kg. In this case, given that the specific gravity of the dissolved calcium chloride is  $2.0 \text{ g/cm}^3$ , the volume  $V$  translates to  $10 \text{ kg}/2.0 \text{ g/cm}^3 = 5000 \text{ cm}^3$ .

Similarly, when the specific gravity of the titanium is given as  $4.51 \text{ g/cm}^3$ , the volume of the plate form of the titanium translates to  $100 \text{ g}/4.51 \text{ g/cm}^3 = 22.17 \text{ cm}^3$ . Thus, a major surface area of the plate form titanium becomes  $221.7 \text{ cm}^2$  as being obtained by  $22.17 \text{ cm}^3/1 \text{ mm} = 221.7 \text{ cm}^2$ . Since a surface area in a thickness-wise direction is negligible, the total surface area  $S$  will be  $443.4 \text{ cm}^2$  as being obtained by  $221.7 \text{ cm}^2 \times 2 = 443.4$

cm<sup>2</sup>. Therefore,  $V/S = 5000/444.3 = 11.3$ , which satisfied formula (1), i.e.,  $V/S \leq 100$ .

Likewise in paragraph [0052], it is shown that titanium of 100 g in the form of a foil which a thickness of about 0.1 mm is charged into calcium chloride of 10 kg. Using a similar calculation as described above gives a total surface area  $S$  as 4434 cm<sup>2</sup>, thereby obtaining a  $V/S$  value of 1.13, which satisfied formula 2 or  $V/S \leq 10$ . Thus, no new matter is introduced by the changes to claims 1 and 2.

Second, the introduction of the limitations into claims 1 and 2 clearly places the application in condition for allowance so that entry of this amendment should be permitted.

Turning to the rejection, the Examiner asserts that WO 99/64639 to Fray anticipates claim 1, referring to page 9, lines 6-10, to support the rejection. The Examiner also observes that since the bath of Fray is in contact with a titanium crucible, the purifying of the salt inherently occurs.

Applicant traverses the rejection on a number of grounds. First, claim 1 now requires that titanium or a titanium alloy is used as an adsorbent for the purifying of the metal salt. Example 1 or page 9, lines 6-10 cannot serve as a basis to reject claim 1. The process of Example 1 is a reduction of titanium oxide to titanium, not a purifying of a metal salt by immersing adsorbents as now defined in a metal salt formed by melting as recited by claim 1. Similarly, in Example 2 of Fray, the foil is titanium oxide covered

and the purpose of placing the foil in the bath is to reduce the oxide on the foil. Therefore, the only legitimate conclusion is that Fray does not teach a metal salt purifying method and particularly the method defined by claim 1.

Fray also fails to teach the method in the context of controlling the relationship of the volume of the metal salt to the surface area of the adsorbents. Lacking this recognition, the Examiner has no basis from which to allege that method including having the adsorbents and volume of the metal salt satisfy the formulas (1) and (2) are somehow obvious variants of Fray.

Further, there is no basis for the Examiner to allege that the formulas are mere optimizations of result effective variables since Fray fails to even recognize the volume and surface area effect, which is defined in claims 1 and 2 now. Without such recognition, there can be no basis to assert that the claims are merely a routine optimization of a known variable.

A second reason that the rejection is improper is the Examiner's reliance on the titanium crucible as a purifying source. This approach cannot be used since claims 1 and 2 require immersion of particular adsorbents into a metal salt, which must now be construed as a metal bath. The contact between the walls of the vessel of Fray and the bath do not meet the limitations of claims 1 and 2 In this regard.

Applicant also contests the Examiner's comment that the claims do not define a purification of a metal salt bath. In the rejection, the Examiner

indicates that purifying a metal salt is not the same as the argued step of purifying a molten bath. Applicant submits that claim 1 now defines the metal salt as being formed from a melted salt and there is no doubt that a molten salt bath is now purified according to the method of claim 1.

To recap, Fray just does not teach the purifying method of claim 1 and a *prima facie* case of anticipation cannot be established. In addition, there is no basis from which to base a rejection on 35 U.S.C. § 103(a) since Fray is fundamentally different from the method of claim 1. To make such a rejection would be the blatant application of hindsight and such a rejection could not be sustained on appeal.

Since Fray does not teach claim 1, the rejections of claims 4-6, 12, and 16 are also flawed since the secondary Fray reference does not supply the deficiencies in the primary Fray reference. Thus, these claims are also in condition for allowance based on their dependency. The remaining dependent claims 2, 3, 7, 9, 10, and 13 are also in condition for allowance based on the fact that they are ultimately dependent on claim 1.

In summary, it is respectfully submitted that claim 1 is not taught or suggested by Fray, regardless of the teachings of the secondary Fray reference, and the rejections must be withdrawn.

Accordingly, the Examiner is requested to examine this application and pass all pending claims onto issuance.

Application No. 10/509,250

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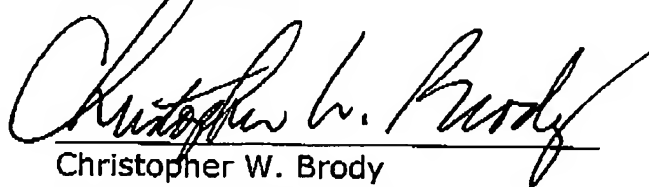
If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

The above constitutes a complete response to all issues raised in the Office Action dated August 7, 2008.

Again, reconsideration and allowance of this application is respectfully requested.

Applicant respectfully submits that there is no fee required for this submission, however, please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,  
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